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3/14/75**March 14, 1975**

**Ms. Carolyn H. Olsen
Illinois Environmental Protection Agency
Division of Land Pollution Control
Permit Section
2200 Churchill Road
Springfield, Illinois 62706**

**SUBJECT: Peoria County
Peoria/Janson**

RECEIVED

JUL 21 1975

ILL. EPA - D.L.P.C.
MAIL ROOM

Dear Ms. Olsen:

In response to your February 13, 1975 denial letter concerning the subject permit application, attached in duplicate is information in reply to the items listed in your denial.

We trust that this data will fully answer your questions and allow issuance of the Development Permit. Should you have any further questions or comments, please contact us directly.

Sincerely,

James Douglas Andrews, P.E.

**cc: Larry Eaton
Charles Janson**

5-14-75

SUPPLEMENT TO APPLICATION FOR PERMIT

PEORIA COUNTY
Peoria/Janson

1. Attached are copies of Peoria County documents indicating that the landfill site operates under Non - Conforming Use No. 196, issued May 24, 1961. This was apparently issued subsequent to showing of proof that the site was in existence prior to the advent of county zoning. We are currently attempting to obtain a copy of the actual permit from the files of the Peoria County Zoning Department.
2. Attached is a copy of the requested letter from the U.S.G.S., originally intended as the last page of the application.

We have discussed with the Illinois Department of Transportation, Division of Water Resources, the matter of their requirements concerning the landfill and have been advised verbally that D.O.T. has no controls outside of the channel of Kickapoo Creek. A written opinion has been requested and will be forwarded upon receipt. Attached is a copy of our request to the Department.

3. Attached is a detail of the berm construction. The berm will be constructed of clay soil excavated during trench construction, having a maximum permeability of 1×10^{-6} cm/sec.

Attached is a redrawn cross-section 2 - 2 showing existing, development and completed site conditions. Cross-section 1 - 1 has not been redone since that section lies north of the major site operations and was drawn originally only to show geologic conditions in that portion of the site and adjacent areas.

While our original information does accurately display the locations of the stone and coal stratum within the hill adjacent to the landfill, we did fail to indicate that some of the coal and underlying stone has been removed from the south side of the hill, presumably from random surface mining in past years. Visual observations on the site indicate soil, rather than stone and coal in those areas proposed for trenching. The intended site operation is to construct the trenches into the hillside, stopping northerly progress prior to reaching stone or coal. A minimum of five feet of clay will be kept between in-place coal and any refuse fill.

A detail of trench construction, showing the west ends of Trenches 2 through 4, is attached. The trench walls and the end opposite the entrance ramp will be constructed on a slope with a fall of one horizontal to ten vertical. The minimum trench width of twenty feet is greater than twice the width of a typical track-type dozer and will, thus, allow efficient refuse handling and covering. Since the site will be used for disposal only by the operator, this width will not present a conflict between disposal trucks and landfill equipment. The dozer will be removed from the trench while unloading takes place and can then be returned to use in the trench after the truck exits.

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Should a sand lens be encountered during trench construction, particularly in Trenches 1, 11 or 12, this will be eliminated by a clay seal using excavated clay soil from within the site. This procedure will involve removal of the sand lens and adjacent loose soils with the bucket of a track-type end-loader, to a minimum depth of three feet into the trench wall or floor. Selected clay displaying the greatest impermeability will then be placed into the excavation with the endloader and be recompactd to a maximum permeability of 1×10^{-5} cm/sec.

4. It is not known if the leachate generation from the old refuse to be placed in Trench 1 will be at an accelerated or decelerated rate. Apparently, the old refuse is near saturation and will produce leachate sooner than fresh refuse; however, the leachate will be at a reduced concentration since the refuse has probably already gone through it's major decomposition. Albeit, leachate generation in any trench will be at a rate slow enough that little build-up will have occurred prior to placing the drainage break between trenches. Individual trench leachate build-up times will vary with trench size; however, leachate build-up will generally average less than one foot per year. Water balance calculations are presented subsequent.

We feel that net infiltration into the landfill at a rate of five inches per year is realistic. Annual precipitation in the region averages 34 inches per year. Considering that the site faces to the south into the sun and wind, increasing evaporation and future transpiration, and considering that soils recompactd to an approximate permeability of 1×10^{-6} cm/sec will be used in covering, placed on a slope averaging approximately five percent, infiltration through the cover at a rate of six inches per year appears reasonable. Using this six inch infiltration, with soils in the region of the trenches at a permeability of 1×10^{-7} cm/sec, and a hydraulic gradient within the fill of 1.25, the following water balance calculations are shown for a trench 200' x 20' x 10' with walls sloped at 1/10, this trench being typical in size to those proposed for the site:

$$\begin{aligned} Q_{in} &= \text{surface area} \times \text{infiltration} \\ &= 4000 \text{ sq. ft.} \times .5 \text{ ft./yr.} \\ &= 2000 \text{ cu. ft./yr.} \end{aligned}$$

$$\begin{aligned} Q_{out} &= \text{interior surface area} \times \text{permeability} \times \text{hydraulic gradient} \\ &= 4654 \text{ sq. ft.} \times .1035 \text{ ft./yr.} \times 1.25 \\ &= 602 \text{ cu. ft./yr.} \end{aligned}$$

$$\begin{aligned} \text{Net Infiltration} &= 2000 \\ &\quad \underline{-602} \\ &= 1398 \text{ cu. ft./yr.} \quad \text{or} \quad 4.7'' \text{ build-up/yr.} \end{aligned}$$

While these calculations do not account for ground water movement into the fill, the permeability in the area of the fill makes this factor practically nil. In summary, we feel that our original estimate of a five inch net infiltration is realistic and reasonably accurate, providing proper operational procedures are followed. Build-up of water in the trenches while open will be minimized by

routinely pumping surface water collection out of the trenches as necessary to maintain dry conditions. Since the trench floors slope away from the end receiving refuse, surface water will drain away from the fill. Should any leachate occur in an open trench, it will be pumped back into the fill.

Inasmuch as the method of providing a break between the trenches at the floor level appears to create some operational difficulties, particularly in addressing a leachate head in a completed trench, a modified system of providing gravitational leachate flow toward the monitoring and collection system is being proposed. Following the completion of two adjacent trenches, a backhoe will be used to dig a leachate relief trench between the two trenches at the location previously proposed for the break at floor level. This relief trench will be constructed into the wall between the trenches to an elevation of 464 or below and be backfilled with one-inch gravel. This connection will then allow lateral leachate movement toward the monitoring and collection system at a level lower than that proposed for leachate collection. To aid in locating the relief trench, it's future location will be marked by a stake placed between trenches coinciding with the refuse low point. Detail is shown on the attached trench construction detail.

Area Fill 9 and Area Fill 10 will receive leachate treatment in a manner similar to that of the trenches. The lowest point of these areas that will allow leachate to escape is at approximate elevation 467, at the north on the south wall of Trench 8. Thus, leachate will flow into the collection system and be monitored and collected as necessary. Assuming leachate build-ups in the area fills similar to those experienced in the trenches, overflow into the collection system will be four years after use.

5. Federal Aviation Administration Order 5200.5, "FAA Guidance Concerning Sanitary Landfills On Or Near Airports," is a guideline for airport owners in eliminating hazardous bird conditions. Paragraph 4.a. states, in part, "....If a sanitary landfill....cannot be closed within a reasonable time, it should be designed and operated in accordance with the criteria and instructions issued by the Environmental Protection Agency, the Department of Health, Education and Welfare, and other such regulatory bodies that may have applicable requirements...." This indicates to us that the landfill has the right to develop and operate in accordance with applicable regulations. If the FAA or Peoria Municipal Airport are able to demonstrate a hazard caused by the landfill's presence, they presumably have adequate remedies available at law to cause removal of the hazard.

3-14-76

March 11, 1975

Mr. Leo Eisel, Director
Division of Water Resources
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62706

Dear Mr. Eisel:

Pursuant to my telephone conversation of this date with Mr. Dennis Kennedy of your staff, we are writing to ascertain your requirements concerning physical changes in the flood plain of Kickapoo Creek, caused by the operation of a sanitary landfill.

The site in question is the Janson Landfill, located southwest of Peoria within the NW $\frac{1}{4}$ of Section 13, T8N, R7E. The site is located on the west bank of Kickapoo Creek, approximately one-quarter mile downstream from Gaging Station 05563500. While the landfill has been in existence for over twenty-five years, new Illinois Environmental Protection Agency regulations require an I.E.P.A. permit, which we are currently applying for.

Our site design dictates that a majority of the operation will be conducted in upland areas remote from the creek. However, some filling will take place in a lower area to be protected by an earthen berm. Also, since some old exposed refuse exists within the flood plain, this will have to receive an earthen cover. No alteration of the creek channel will take place. Using published data from the aforementioned Gaging Station, we have calculated that the completed landfill will diminish the on-site flood plain by approximately 2.5 acres and reduce the on-site storage by approximately 830,000 cubic feet during a 100 year flood. For your convenience, a sketch of the site is attached.

During our conversation, Mr. Kennedy indicated that the landfill would probably not fall within the jurisdiction of the Department of Transportation. Please advise us if this is correct, or if there are any D.O.T. permit requirements for the site.

Thank you for your cooperation.

Sincerely,



David L. Beck
Technical Specialist



United States Department of the Interior

GEOLOGICAL SURVEY

October 4, 1974

Mr. David L. Beck
Environmental Engineering
300 Iles Park Place
Springfield, IL 62703

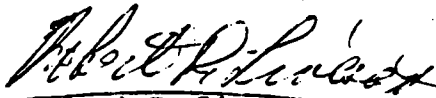
ILL. E.P. - 1040
STATE OF ILL.

Dear Mr. Beck:

The flow of June 22, 1974 at our gaging station at Highway 116 on Kickapoo Creek at Peoria, Illinois (station number 05563500) was computed by indirect-survey techniques to be 48,500 cubic feet per second. A peak gage height of 29.68 feet was obtained from high-water marks at the gage. Datum of the gage is 448.37 ft. above mean sea level, making the flood elevation at the gage 478.05 ft. above mean sea level. This peak is the maximum of record (1943-present) and exceeds the previous historical flood set in May, 1927 by 5.1 feet.

Data given above are provisional and subject to revision.

FOR THE DISTRICT CHIEF


Robert D. Livesay
Peoria Subdistrict Chief

RDL:ml

CC: District Chief, WRD
Attn: G. W. Curtis

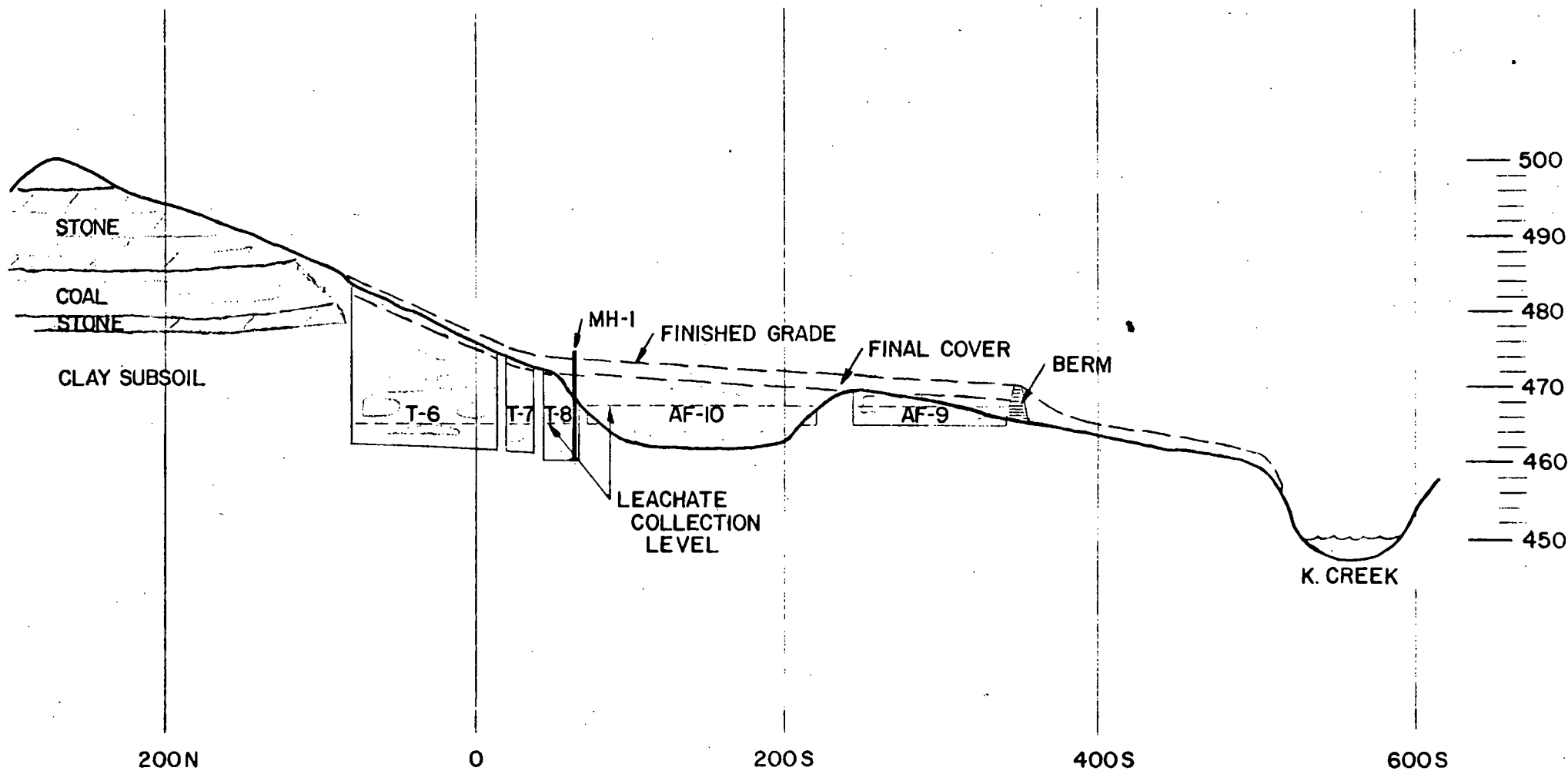
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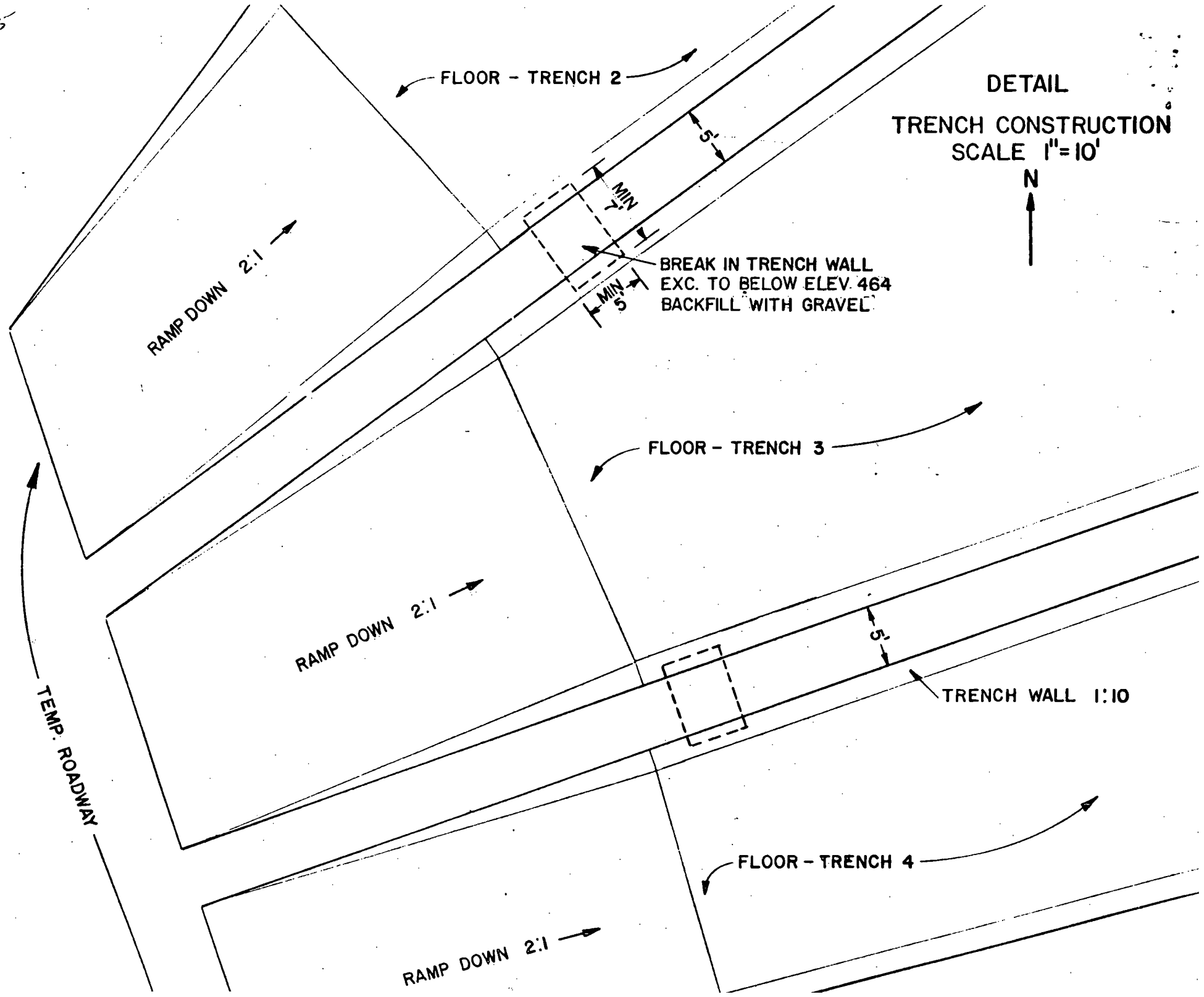
SECTION 2-2 LOCATION OF EXISTING AND COMPLETED FILL AREAS

N ← → S

SCALE: HORIZ. 1"=100'
VERT. 1"=20'



3-14-75



DETAIL

TRENCH CONSTRUCTION
SCALE 1"=10'

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FLOOR - TRENCH 2

RAMP DOWN 2:1

BREAK IN TRENCH WALL
EXC. TO BELOW ELEV. 464
BACKFILL WITH GRAVEL

FLOOR - TRENCH 3

RAMP DOWN 2:1

TRENCH WALL 1:10

FLOOR - TRENCH 4

RAMP DOWN 2:1

TEMP. ROADWAY

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BERM CONSTRUCTION

FACING WEST
AT SECTION 2-2
SCALE 1" = 3'

